

REMARKS

Claims 19-50 were pending when the Application was last examined. All of the previously pending claims are amended. New claims 51-55 are added. Claims 19-55 are now pending. Claims 19-22, 26-29, 33, 35 and 51-55 are independent.

The specification is amended for informalities such as typographical errors.

The specification is also amended to remove a reference to a “non-patent reference 1” that defines the 3GPP details. 3GPP details are well known in the communications art.

Objections to the Abstract

The abstract is amended to contain fewer than 150 words.

Withdrawal of the objection is requested.

Objections to the Claims

Claim 19 is amended merely to correct an informality and withdrawal of the objection to claims 19 and 23-25 is requested.

Claim Rejections -35 U.S.C. 112(2)

Claims 35 and 36 are rejected under 35 U.S.C. 112, second paragraph, as indefinite for failing to point out what is included or excluded by the claim language. Claims 35 and 36 are amended to recite “a computer readable medium,” and Applicant respectfully submits that these claims comply with 35 U.S.C. § 112, second paragraph.

Claim Rejections – 35 U.S.C. 103

Claims 1-17 and 19-29 are rejected under 35 U.S.C. 103 as unpatentable over Ohlsson (U.S. Patent Application Publication No. 20020068571) in view of Metzler (WO 03/003677A1).

Metzler is in German. However, the Examiner is relying on U.S. Patent No. 7,260,088 to Metzler and Applicant will be citing to this U.S. patent when referring to Metzler. (Office action, p. 3.)

Claims 19, 20 and 33 are separately discussed. Claims 21, 22 and 26-29 are rejected based upon the rejection of claim 20. (Office action, p. 6, p. 7 and p. 8.) Claim 35 is rejected based upon the rejection of claim 33. (Office action, p. 10.)

Applicant amends the claims as shown above, traverses the rejections as follows, and submits that the claims would be patentable even without the amendments.

Claim 19

Claim 19 as amended recites “A mobile communication system, comprising: a mobile terminal unit; a radio base station which communicates with said mobile terminal unit via a radio channel; a radio controller which controls said radio base station and is physically separated into control plane equipment for controlling transfer of signaling and user plane equipment for controlling transfer of user data; and a radio base station replacement control apparatus which controls replacement of said radio base station, wherein the mobile terminal is handed over from the radio base station to another radio base station, controlled by a drift radio controller, without establishing a path between the radio controller and the drift radio controller.” (Emphasis added.)

Support for these amendments may be found throughout the specification and drawings and, for example, Figure 6 of the drawings and in paragraph [0091] of the published Application. (U.S. Patent Application Publication No. 2006/0223533.) For example, paragraphs [0091] states “soft handover across RNCs can be performed by connecting a path from a single U plane controller to a plurality of Node Bs, without setting any path between the drift RNC and serving

RNC in relation to user data unlike in the conventional systems.” (See also, paragraph [0017] of the published Application for a contrast with prior art.)

The Office action cites to Ohlsson for teaching all elements of claim 19 except for the “radio controller.” (Office action, pp. 3, 4.)

The Office action cites to Metzler, figure 1 an in col. 3, lines 57-63, for teaching the “radio controller ... physically separated into a control plane equipment for controlling transfer of signaling and user plane equipment for ... controlling transfer of user data.” (Office action, p. 4.) According to the Office action, “RNC2 functionalities is divided into two separate units: UPS and RCS. The UPS controls the user data and the RCS control the signal and resources of the base station.” (Office action, p. 4.) The motivation to combine is cited as allowing signaling and user data to be administered from two different servers to provide a high degree of network control. (Office action, p. 4.)

Claim 19 is amended to include “wherein the mobile terminal is handed over from the radio base station to another radio base station, controlled by a drift radio controller, without establishing a path between the radio controller and the drift radio controller.” (Emphasis added.)

Applicants submit that Metzler relies on the Iur interface for establishing a connection between its two networks Z1 and Z2. (See, Metzler, figure 1, col. 4, lines 1-6.) Iur is the conventional interface for establishing connection between RNCs in the same network. The background section of the current Application, refers to Iur as a prior art method stating: “If soft handover occurs across RNCs, a path is connected by using the interface called Iur (FIG. 1) between a serving RNC and drift RNC.” (Published Application , paragraph [0017].) Metzler, like the admitted prior art, shows an Iur interface in its figure 1 and states “The radio network

controller RNC1 is connected via an interface lur with a first interworking unit IWU1. The first interworking unit IWU1 is connected on the other side with the second access network Z2. The connection is for example realized via node K of the radio network controller RNC2.” (Metzler, col. 4, lines 1-6.)

As such, the radio controller of Metzler is not such that “the mobile terminal is handed over ... without establishing a path between the radio controller and the drift radio controller.” as claimed in claim 19.

Ohlsson, while not cited against the radio controller of claim 19, still shows the same conventional lur interface for establishing connection between different RNCs. (See, Ohlsson, figure 6.)

Accordingly, claim 19 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 20

Claim 20 is amended to recite “A mobile communication systems comprising: a mobile terminal unit; a radio base station which communicates with said mobile terminal unit via a radio channel; a radio controller which controls said radio base station and is physically separated into control plane equipment for performing control independent of a radio transmission scheme and user plane equipment for performing control depending on a radio transmission scheme; and a radio base station replacement control apparatus which controls replacement of said radio base station, wherein the control plane equipment and the user plane equipment are adapted to be connected across a network.” (Emphasis added.)

Claim 20 is amended by including some of the substance of claim 37 that depends from claim 20. Claim 37 is rejected by the Office action according to the reasoning: “Ohlsson as modified by Metzler teaches claim 20, Ohlsson also teaches further comprising a network which connects ... (see fig. 1A, par. 0041 lines 1-3.)” (Office action, p. 10.) Otherwise, the Office action is citing to the same passages of Ohlsson against the elements of claim 20. (Office action, p. 5.) The Office action is citing to additional passages of Metzler, col. 4, lines 24-29 and 65-67 and col. 5, lines 1-2, against the “radio controller” of claim 20. (Office action, p. 5.)

Metzler states “The radio network controller RNC2 has one or more user plane servers UPS and one or more radio control servers RCS that are connected to each other via node K.” (Metzler, col. 3, lines 57-60.) The statement “connected via node K” does not indicate physical separation within the meaning of claim 20. To further emphasize this physical separation, claim 20 is amended to recite that “control plane equipment and the user plane equipment are adapted to be connected across a network.” The node K of Metzler does not teach “across a network” of claim 20.

The additionally cited portion of paragraph 41 of Ohlsson and figure 1A of this reference don’t show a network. The cited lines 1-3 of paragraph 41 of Ohlsson state “FIG. 1A shows portions of a telecommunication system including a source base station BSs, a destination base station BSD, and a control node CN.” Ohlsson did not show a separation within its RNCs 26, that are shown in figure 6, and not in figure 1A, of this reference. Even if Metzler is combined with Ohlsson to show that the RNC of Ohlsson has separate user plane and control plane units, still the RNC of Ohlsson is shown as one box with no network inside. (See, Ohlsson, figure 6.)

As such, even a combination of Ohlsson and Metzler does not teach or suggest that “the control plane equipment and the user plane equipment are adapted to be connected across a network” of claim 20.

Accordingly, claim 20 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 21

Claim 21 is amended to recite “A mobile communication systems comprising: a mobile terminal unit; a radio base station which communicates with said mobile terminal unit via a radio channel; a radio controller which controls said radio base station and is physically separated into control plane equipment for controlling transfer of signaling and user plane equipment for controlling transfer of user data, said user plane equipment performing control depending on a radio transmission scheme; and a radio base station replacement control apparatus provided physically independently of the control plane equipment and the user plane equipment, the radio base station replacement control apparatus controlling replacement of said radio base station with other radio base stations being controlled by the radio controller or by other radio controllers.” (Emphasis added.)

Support for these amendments may be found throughout the specification and drawings and, for example, Figures 16, 18 and 23 of the drawings and in paragraph [0123] and [00125] through [0127] of the published Application.

The element “a radio base station replacement control apparatus provided physically independently of the control plane equipment and the user plane equipment” is also present in independent claim 33. The Office action is citing to the same handover unit 100 shown in

figures 1A and 6 of Ohlsson against the “radio base station replacement control apparatus” of claim 33. (Office action, p. 8.) Then, Metzler is combined with Ohlsson against the “radio controller” of the claim and for showing physically separate first and user plane equipment of the radio controller. (Office action, p. 9.)

Applicants submit that Metzler shows only the RNC2 with separate UPS and RCS units in figure 1 of this reference. Assume the RNC 26 of Ohlsson, which includes the handover unit 100, has the structure of the RNC2 of Metzler. Then figure 6 of Ohlsson that shows the RNC 26 has to show that the handover unit is separate from the UPS and RCS. However, the RNC 26 of Ohlsson is shown to include only the handover unit 100. Therefore, it does not and cannot show a handover unit 100 in addition to an RCS and a UPS. Further, if it is assumed that one RNC 26 of figure 6 of Ohlsson has the other two other components in addition to the handover unit 100, then, all RNCs of figure 6 of Ohlsson have the same structure. Then, it is not clear which handover unit 100 is the “radio base station replacement control apparatus” of claim 21 that is handling the “controlling replacement of said radio base station with other radio base stations being controlled by the radio controller or by other radio controllers.” And, there is no disclosure or reason for every RNC to have a “radio base station replacement control apparatus” that can control bases of that RNC as well as “radio base stations being controlled by the radio controller or by other radio controllers.” The system becomes redundant and costly.

Accordingly, claim 21 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 22

Claim 22 is amended to recite “A mobile communication system, comprising: a mobile terminal unit; a radio base station which communicates with said mobile terminal unit via a radio channel; and a radio controller which controls said radio base station and is physically separated into control plane equipment for controlling a terminal resource of said mobile terminal unit and user plane equipment for accommodating said radio base station and controlling a base station resource of said radio base station, wherein the user plane equipment is incorporated into the radio base station, and wherein replacement of said radio base station in communication with the mobile terminal with another radio base station is controlled by a user data selector and synthesizer unit incorporated into the radio base station.” (Emphasis added.)

Support for these amendments may be found throughout the specification and drawings and, for example, Figure 6 of the drawings, showing a selector/synthesizer element 123, in Figure 8, showing each Node B 6 including a UPE 42, and in paragraphs [0092] and [0093] of the published Application.

Applicants submit that the physical separation shown by Metzler, the reference cited against the “physically separated” feature of “control plane equipment” and “user plane equipment” of the “radio controller” of claim 22 is at best tenuous. Therefore, Metzler cannot and does not show that “the user plane equipment is incorporated into the radio base station,” as claimed in claim 22. In figure 1 of Metzler, NodeB2 is shown outside the RNC2 of Z2 and neither RCS (control plane) nor UPS (user plane) are shown to be incorporated into NodeB2. Ohlsson does not show internal elements of its RNC and cannot show any separation.

As such, the cited references, alone or in combination, do not teach or suggest “a radio controller ... physically separated into control plane equipment ... and user plane equipment ... wherein the user plane equipment is incorporated into the radio base station” of claim 22.

Accordingly, claim 22 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 26

Claim 26 is amended to include “A radio base station replacement control apparatus which controls replacement of a radio base station in a mobile communication system, the radio base station replacement control apparatus comprising: a database search unit for searching a database for storing information regarding radio base stations being controlled by a plurality of radio controllers; and a cell setting change designation unit for concentrically controlling a rearrangement of the radio base stations....” (Emphasis added.)

Support for these amendments may be found, for example, in Figures 16, 18 and 23 of the drawings showing a single monitor controller 51 for controlling a plurality of radio controller components (CPEs 41, UPEs 42 in figure 16 or terminal resource control units 110 and base station resource control units 120 in figure 23 and components of the monitor controller in figure 18) and in paragraph [0041] of the published Application stating: “In the present invention ... a monitor controller is additionally placed in the network. Therefore, even in a system configuration in which a plurality of CPEs or a plurality of terminal resource control units are arranged in the network, the monitor controller can concentrically control the change of cell setting (the rearrangement of Node Bs). This makes it unnecessary to give any specific CPE or terminal resource control unit the function of controlling the change of cell setting (the

rearrangement of Node Bs), and achieves the effect of giving the same arrangement to all CPEs or terminal resource control units. This is advantageous in respect of both manufacture and cost.” (Emphasis added.) (See also, paragraphs [0127] to [0145] of the published Application explaining the cell setting process.)

Applicants submit, neither Ohlsson nor Metzler show a “concentrically controlling” element. The handover unit 100 of Ohlsson that is cited against the “radio base station replacement control apparatus” of claim 26 (Office action, p. 7) is not shown in Ohlsson, or in RNC2 of Metzler that is combined with Ohlsson, to include a “a cell setting change designation unit for concentrically controlling a rearrangement of the radio base stations” of claim 26. Also, figure 6 of Ohlsson that shows a plurality of base stations and RNCs as radio controllers, does not show a single “radio base station replacement control apparatus ... for concentrically controlling a rearrangement of the radio base stations” when the “radio base stations” are “being controlled by a plurality of radio controllers” as claimed in claim 26.

Accordingly, claim 26 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 27

Claim 27 is amended to include elements similar to amended claim 26. As such, claim 27 is patentable at least for reasons cited above regarding patentability of claim 26.

Accordingly, claim 27 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 28

Claim 28 is amended to include elements similar to amended claim 26. As such, claim 28 is patentable at least for reasons cited above regarding patentability of claim 26.

Accordingly, claim 28 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 29

Claim 29 is amended to include elements similar to amended claim 26. As such, claim 29 is patentable at least for reasons cited above regarding patentability of claim 26.

Accordingly, claim 29 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

Claim 33

Claim 33 is amended to include “a radio base station replacement control apparatus which is provided physically independently of the first and user plane equipment and controls replacement of the radio base station with other radio base stations being controlled by the radio controller or by other radio controllers.”

Arguments similar to those presented above for claim 21 apply to this element of claim 33.

Accordingly, claim 33 is believed to be patentable over the cited references, taken alone or in combination.

Withdrawal of the rejection is requested.

New claims 51-55

New claim 51 includes “wherein the mobile terminal is handed over from the radio base station to the other radio base station by a means for drift radio controlling, without establishing a path between the means for controlling the radio base station and the means for drift radio controlling.”

New claims 52-55 include some of the patentable elements of the claims presented and argued above.

These new claims are believed to be patentable in view of the cited references.

Allowance of new claims 51-55 is requested.

Dependent Claims

Claims 23-25 and 43 depend from claim 19.

Claims 37 and 40 depend from claim 20.

Claims 38 and 41 depend from claim 21.

Claims 39 and 42 depend from claim 22.

Claims 30-32 and 50 depend from claim 26.

Claims 44 and 47 depend from claim 27.

Claims 45 and 48 depend from claim 28.

Claims 46 and 49 depend from claim 29.

Claim 34 depends from claim 33.

Claim 36 depends from claim 35.

With respect to the rejection of dependent claims while continuing to traverse the Examiner’s characterization of the teachings of the references used by the Examiner in rejecting

these claims, Applicants respectfully submit that these claims are patentable by definition, by virtue of their dependence upon their respective patentable independent claims.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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